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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/586,441

07/18/2006

Koichi Akita

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OLIFF & BERRIDGE, PLC

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EXAMINER

TRIEU, THAI BA

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/586,441	<b>Applicant(s)</b> AKITA, KOICHI	
	<b>Examiner</b> Thai-Ba Trieu	<b>Art Unit</b> 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/18/2006 &amp; 01/23/2008</u> .                             | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

The Preliminary Amendment filed on July 18, 2006 is acknowledged.

Claim 3 was amended.

***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically,

- line 4, the recitation of “an output to be compensate for because of ..” renders the claim indefinite, since it is not clear that which value(s)/signal(s) is/are to be considered as an output; and which value(s)/signal(s) is/are to be compensated for? Applicant is required to identify the value(s)/signal(s) to be an output and to be compensated for; or to revise the claimed features.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Takeuchi Makato (Pub. Number JP 06-288246 A).***

Takeuchi Makato discloses a control apparatus for an electrically assisted supercharger (10), comprising a supercharger (11) disposed on an intake passage of an internal combustion engine mounted on a vehicle, and driven by an electric motor (12, 12-2); controlling means (19) for controlling the electric motor (12, 12-2) to control a boost pressure; and pressure detecting means (20) for detecting a state of the atmospheric pressure (See Figure 1),

wherein when the atmospheric pressure detected by the pressure detecting means (20) becomes less than a predetermined value, the controlling means makes a driving force of the electric motor larger than that when the atmospheric pressure is not less than the predetermined value (See Abstract, Paragraphs [0015]-[0016]).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Claims 2-3 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi Makato (Pub. Number JP 06-288246 A), in view of Shirikawa Akira (Pub. Number JP 2002-115553 A).***

Takeuchi Makato discloses the invention as recited above, and further discloses the controlling means (19) controlling the electric motor so that the intake air mass becomes coincident with the target intake air mass; and a turbocharger (11, 15) for performing supercharging by making use of an exhaust flow (via 8) of the internal combustion engine (1) (See Figure 1).

However, Takeuchi Makato fails to disclose a deviation between the intake air mass detected by the intake air mass detecting means and a target intake air mass determined based on an operating state of the internal combustion engine being a parameter; a variable nozzle mechanism; and an exhaust gas recirculation system.

Shirikawa Akira teaches that it is conventional in the art of controlling a supercharger, to utilize a deviation between the intake air mass detected by the intake air mass detecting means and a target intake air mass determined based on an operating state of the internal combustion engine (See Figure 107, Abstract, Paragraph [0010] of a machine translation provided by applicant); a variable nozzle mechanism (53) for variably controlling a supercharging state by the turbocharger, wherein when the atmospheric pressure detected by the pressure detecting means becomes less than the predetermined value, consideration to an intake air mass is prohibited on the occasion of determining a control quantity of the variable nozzle mechanism (See Figure 1); and an exhaust gas recirculation system (via 4 to 3) for recirculating exhaust

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gas discharged from the internal combustion engine, to the intake passage (See Figure 1), wherein the controlling means controls (41) the exhaust gas recirculation system so that an amount of the exhaust gas recirculated to the intake passage becomes coincident with a target exhaust gas recirculation amount determined based on the operating state of the internal combustion engine (See Figure 1, Paragraph [0040] of a machine translation provided by applicant).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a deviation between the intake air mass detected by the intake air mass detecting means and a target intake air mass determined based on an operating state of the internal combustion engine being a parameter; a variable nozzle mechanism; and an exhaust gas recirculation system, as taught by Shirikawa Akira, to provide a parameter to control the electric machine; a variable nozzle mechanism to adjust an intake air mass; and an exhaust gas recirculation system to reduce the exhaust emissions for the Takeuchi Makato turbocharged engine system having an assisted motor/dynamo electric machine.

***Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi Makato (Pub. Number JP 06-288246 A), in view of Aoki Atsushi et al. (Pub. Number JP 2001-336433 A).***

Takeuchi Makato discloses the invention as recited above, and further discloses the controlling means (19) controlling the electric motor so that the intake air mass

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becomes coincident with the target intake air mass. However, Takeuchi Makato fails to disclose a variable nozzle mechanism.

Aoki Atsushi teaches that it is conventional in the internal combustion engine art, to utilize a turbocharger (15) for performing supercharging by making use of an exhaust flow of the internal combustion engine (1), and a variable nozzle mechanism (21) for variably controlling a supercharging state by the turbocharger, wherein when the atmospheric pressure detected by the pressure detecting means becomes less than the predetermined value, consideration to an intake air mass is prohibited on the occasion of determining a control quantity of the variable nozzle mechanism; and wherein the controlling means (6) prohibits consideration to the intake air mass on the occasion of determining the control quantity of the variable nozzle mechanism (21).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a variable nozzle mechanism, as taught by Aoki Atsushi, to improve the efficiency of the Takeuchi Makato device, since the sue thereof would have controlling air intake to be delivered into the engine in order that the engine is capable of performing at a desired operating condition.

***Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi Makato (Pub. Number JP 06-288246 A), in view of Aoki Atsushi et al. (Pub. Number JP 2001-336433 A), and further in view of any of Woollenweber (Patent Number 6,141,965), Woollenweber (Patent Number 6,079,211), and Halami (Patent Number 6,029,457).***

Takeuchi Makato discloses the invention as recited above; however, Takeuchi Makato fails to disclose the electric motor being built in the turbocharger; and the supercharger and the turbocharger being integrated with each other.

Woollenweber/ Woollenweber/Halami teaches that it is conventional in the art of a turbocharged internal combustion engine having multi- turbochargers, to utilize the electric motor (67 of '965; 59 of '211; 67 of '457) being built in the turbocharger (62 of '965; 18 of '211; 62 of '457); and the supercharger and the turbocharger being integrated with each other (See Figure 2 of '965; Figures 2-5 of '211; Figure 2 of '457).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the electric motor being built in the turbocharger; and the supercharger and the turbocharger being integrated with each other, as taught by Woollenweber/ Woollenweber/Halami to provide an arrangement/design of a multi-turbocharged internal combustion engine for and to improve the efficiency of the Takeuchi Makato system, since the use thereof would have controlled the motor/electric machine as the engine at low speed operating condition.

### ***Conclusion***

The IDSs (PTO-1449) filed on July 18, 2006 and January 23, 2008 have been considered. Each initialized copy is attached hereto.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.



***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TTB  
August 11, 2008

/Thai-Ba Trieu/  
Primary Examiner  
Art Unit 3748